CONTENTS

VOLUME 94 · NUMBER 1 · JULY 1989

1 DANIELA PIETROBON, BLAISE PROD'HOM, and PETER HESS. Interactions of protons with single open L-type calcium channels. pH dependence of proton-induced current fluctations with Cs^+, K^+, and Na^+ as permeant ions

23 BLAISE PROD'HOM, DANIELA PIETROBON, and PETER HESS. Interactions of protons with single open L-type calcium channels. Location of protonation site and dependence of proton-induced current fluctuations on concentration and species of permeant ion

43 CARLO CAPUTO and PURA BOLAÑOS. Effects of D-600 on intramembrane charge movement of polarized and depolarized frog muscle fibers

65 BRUCE P. BEAN and EDUARDO RIOS. Nonlinear charge movement in mammalian cardiac ventricular cells. Components from Na and Ca channel gating

95 LOUIS SIMCHOWITZ and AJUAH O. DAVIS. Sulfate transport in human neutrophils

125 BRET A. HUGHES, JOSEPH S. ADORANTE, SHELDON S. MILLER, and HAI LIN. Apical electrogenic $NaHCO_3$ cotransport. A mechanism for HCO_3 absorption across the retinal pigment epithelium

151 STEPHEN W. JONES and THEODORE N. MARKS. Calcium currents in bullfrog sympathetic neurons. I. Activation kinetics and pharmacology

169 STEPHEN W. JONES and THEODORE N. MARKS. Calcium currents in bullfrog sympathetic neurons. II. Inactivation

183 MICHAEL CHUA and ANGELA F. DULHUNTY. Noninactivating tension in rat skeletal muscle. Effects of thyroid hormone

205 INFORMATION FOR AUTHORS

VOLUME 94 · NUMBER 2 · AUGUST 1989

213 GABRIEL COTA and CLAY M. ARMSTRONG. Sodium channel gating in clonal pituitary cells. The inactivation step is not voltage dependent

233 G. D. NICOL and M. D. BOWNDS. Calcium regulates some, but not all, aspects of light adaptation in rod photoreceptors

261 J. M. TANG, J. WANG, and R. S. EISENBERG. K^+-selective channel from sarcoplasmic reticulum of split lobster muscle fibers

279 JOSEPH B. PATLAK and MAURICIO ORTIZ. Kinetic diversity of Na^+ channel bursts in frog skeletal muscle

303 MARIA LISA ROSSI, CLAUDIO BONIFAZZI, MARTA MARTINI, and RICCARDO FESCE. Static and dynamic properties of synaptic transmission at the cyto-neural junction of frog labyrinth posterior canal

329 ROBERT D. HARVEY and ROBERT E. TEN EICK. On the role of sodium ions in the regulation of the inward-rectifying potassium conductance in cat ventricular myocytes

349 ROBERT D. HARVEY and ROBERT E. TEN EICK. Voltage-dependent block of cardiac inward-rectifying potassium current by monovalent cations

363 MASAMITSU IINO. Calcium-induced calcium release mechanism in guinea pig taenia caeci

385 R. MOTAIS, F. BORGESE, U. SCHEURING, and F. GARCIA-ROMEU. Glutaraldehyde fixation of the cAMP-dependent Na^+/H^+ exchanger in trout red cells

401 CORRECTION

VOLUME 94 · NUMBER 3 · SEPTEMBER 1989

405 GONZALO PIZARRO, ROBERT FITTS, ISMAEL URIBE, and EDUARDO RÍOS. The voltage sensor of excitation-contraction coupling in skeletal muscle. Ion dependence and selectivity

429 BRETT A. ADAMS and KURT G. BEAM. A novel calcium current in dysgenic skeletal muscle

445 LUCIE PARENT and ROBERTO CORONADO. Reconstitution of the ATP-sensitive potassium channel of skeletal muscle. Activation by a G protein-dependent process

465 E. SUSS, S. BARASH, D. G. STAVENGA, H. STIEVE, Z. SELINGER, and B. MINKE. Chemical excitation and inactivation in photoreceptors of the fly mutants *trp* and *nss*

493 JEAN-DANIEL HORISBERGER and GERHARD GIEBISCH. Na-K pump current in the *Amphiuma* collecting tubule

511 DAVID C. GADSBY and MASAKAZU NAKAO. Steady-state current-voltage relationship of the Na/K pump in guinea pig ventricular myocytes

539 MASAKAZU NAKAO and DAVID C. GADSBY. [Na] and [K] dependence of the Na/K pump current-voltage relationship in guinea pig ventricular myocytes

567 DENIS S. LOISELLE. Exchange of oxygen across the epicardial surface distorts estimates of myocardial oxygen consumption

VOLUME 94 · NUMBER 4 · OCTOBER 1989

597 AKIHIKO HIROTA, W. KNOX CHANDLER, PHILIP L. SOUTHWICK, and ALAN S. WAGGONER. Calcium signals recorded from two new purpurate indicators inside frog cut twitch fibers

633 M. CARTER CORNWALL, HARRIS RIPPS, RICHARD L. CHAPPELL, and GREGOR J. JONES. Membrane current responses of skate photoreceptors

649 SATORU KAWAMURA and MOTOHIKO MURAKAMI. Regulation of cGMP levels by guanylate cyclase in truncated frog rod outer segments

669 RICHARD T. MCCARTHY and CHARLES J. COHEN. Nimodipine block of calcium channels in rat vascular smooth muscle cell lines. Exceptionally high-affinity binding in A7r5 and A10 cells

693 B. RIBALET, S. CIANI, and G. T. EDDLESTONE. ATP mediates both activation and inhibition of K(ATP) channel activity via cAMP-dependent protein kinase in insulin-secreting cell lines

719 STEVEN BARNES and BERTIL HILLE. Ionic channels of the inner segment of tiger salamander cone photoreceptors

745 H. CRISS HARTZELL and RICHARD E. WHITE. Effects of magnesium on inactivation of the voltage-gated calcium current in cardiac myocytes

769 KEISUKE HORIUTI, AVRIL V. SOMLYO, YALE E. GOLDMAN, and ANDREW P. SOMLYO. Kinetics of contraction initiated by flash photolysis of caged adenosine triphosphate in tonic and phasic smooth muscles

783 INFORMATION FOR AUTHORS

VOLUME 94 · NUMBER 5 · NOVEMBER 1989

789 STEPHEN J. KORN and RICHARD HORN. Influence of sodium-calcium exchange on calcium current rundown and the duration of calcium-dependent chloride currents in pituitary cells, studied with whole cell and perforated patch recording

813 DANIEL S. DUCH, ESPERANZA RECIO-PINTO, CHRISTIAN FRENKEL, S. R. LEVINSON, and BERND W. URBAN. Veratridine modification of the purified sodium channel α-polypeptide from eel electroplax

833 S. L. HU, Y. YAMAMOTO, and C. Y. KAO. The Ca^{2+}-activated K^+ channel and its functional roles in smooth muscle cells of guinea pig taenia coli

849 S. L. HU, Y. YAMAMOTO, and C. Y. KAO. Permeation, selectivity, and blockade of the Ca^{2+}-activated potassium channel of the guinea pig taenia coli myocyte

863 W. D. Fraser and A. D. Baines. Application of a fiber-matrix model to transport in renal tubules

881 Ellis Cooper and Alvin Shrier. Inactivation of A currents and A channels on rat nodose neurons in culture

911 James N. Weiss and Scott T. Lamp. Cardiac ATP-sensitive K^+ channels. Evidence for preferential regulation by glycolysis

937 Gabriel Cota and Enrico Stefani. Voltage-dependent inactivation of slow calcium channels in intact twitch muscle fibers of the frog

953 Fabio Francini and Enrico Stefani. Decay of the slow calcium current in twitch muscle fibers of the frog is influenced by intracellular EGTA

VOLUME 94 • NUMBER 6 • DECEMBER 1989

973 J. García, M. Amador, and E. Stefani. Relationship between myoplasmic calcium transients and calcium currents in frog skeletal muscle

987 J. B. Troy and Ch. Enroth-Cugell. Dependence of center radius on temporal frequency for the receptive fields of X retinal ganglion cells of cat

997 T. H. Müller, D. Swandulla, and H. D. Lux. Activation of three types of membrane currents by various divalent cations in identified molluscan pacemaker neurons

1015 John D. McCann, Ming Li, and Michael J. Welsh. Identification and regulation of whole-cell chloride currents in airway epithelium

1037 Owen B. McManus and Karl L. Magleby. Kinetic time constants independent of single-channel activity suggest Markov gating for a large conductance Ca-activated K channel

1071 Christian Erxleben. Stretch-activated current through single ion channels in the abdominal stretch receptor organ of the crayfish

1085 Timothy S. McClintock and Barry W. Ache. Ionic currents and ion channels of lobster olfactory receptor neurons

1101 Lan-Bo Shi and A. S. Verkman. Very high water permeability in vasopressin-induced endocytic vesicles from toad urinary bladder

Letters to the Editor

1117 P. Kraemer, R. Lederhofer, J. Schnakenberg, and H. Stieve. A simple explanation for the large and widely differing time exponent of the initial response of *Limulus* photoreceptors

1121 RICHARD PAYNE and ALAN FEIN. Models of the latency of phototransduction must explain the localized, cooperative interaction between effective photons

1123 AUTHOR INDEX TO VOLUME 94

1*a*–47*a* ABSTRACTS OF PAPERS PRESENTED AT THE FORTY-THIRD ANNUAL MEETING OF THE SOCIETY OF GENERAL PHYSIOLOGISTS